

AMENDMENTS TO THE CLAIMS

Please replace all of the pending claims in the application with the following complete set of claims.

1. (original) A fire-resistant structural composite material comprising:
a phenolic resin system,
reinforcing fibers, and
alumina tri-hydrate;
whereby the composite material has an ASTM E-1354 Ignitability of greater than about 60 seconds, an ASTM E-1354 300-Second Average Heat Release of less than about 120 kW/m², and an ASTM E-1354 Peak Heat Release of less than about 150 kW/m² when the composite is exposed to a radiant heat source of about 100kW/m²; and
wherein the composite material is suitable for forming into a structural part.
2. (original) The composite material of claim 1, wherein the phenolic resin system is acid-catalyzed.
3. (original) The composite material of claim 1, wherein the phenolic resin system is base-catalyzed.
4. (original) The composite material of claim 1, wherein the phenolic resin system comprises about 17% to about 21% by weight of the composite material, based on the total weight of the composite material.
5. (original) The composite material of claim 1, wherein the reinforcing fibers are selected from group consisting of glass fiber, carbon fibers, and mixtures and combinations thereof.
6. (original) The composite material of claim 1, whereby the composite material comprises about 63% to about 77% by weight reinforcing fibers, based on the total weight of the composite.

7. (original) The composite material of claim 1, whereby the composite material comprises about 7% to about 12% by weight alumina tri-hydrate, based on the total weight of the composite material.
8. (original) The composite material of claim 2, whereby the composite material comprises about 7% -9% by weight alumina tri-hydrate, based on the total weight of the composite material.
9. (original) The composite material of claim 3, whereby the composite material comprises about 12% by weight alumina tri-hydrate, based on the total weight of the composite material.
10. (original) The composite material of claim 1, wherein the phenolic resin system additionally comprises a siloxane modifier.
11. (original) The composite material of claim 1, whereby the composite material is formed by a method selected from the group consisting of: resin transfer molding resin infusion, filament winding, pultrusion and vacuum assisted resin transfer molding.
12. (original) The composite material of claim 1, wherein the composite material is suitable for forming into a structural part without requiring additional structural materials.
13. (original) The composite material of claim 1, wherein the composite material has an ISO 9705 Average Heat Release Rate of less than about 100 kW, and an ISO 9705 Smoke Production Rate of less than about 1.4 m²/second.
14. (original) The composite material of claim 1, wherein the composite material has an ASTM E-1354 Ignitability of greater than about 90 seconds, an ASTM E-1354 300-Second Average Heat Release of less than about 100 kW/m², and an ASTM E-1354 Peak Heat Release of less than about 100 kW/m² when the composite is exposed to a radiant heat source of about 75 kW/m².

15. (original) The composite material of claim 1, wherein the composite material has an ASTM E-1354 Ignitability of greater than about 150 seconds, an ASTM E-1354 300-Second Average Heat Release of less than about 50 kW/m², and an ASTM E-1354 Peak Heat Release of less than about 65 kW/m² when the composite is exposed to a radiant heat source of about 50 kW/m².
16. (original) A structural part formed from a fire-resistant composite material comprising:
 - a phenolic resin system,
 - reinforcing fibers, and
 - alumina tri-hydrate;whereby the composite material has an ASTM E-1354 Ignitability of greater than about 60 seconds, an ASTM E-1354 300-Second Average Heat Release of less than about 120 kW/m², and an ASTM E-1354 Peak Heat Release of less than about 150 kW/m² when the composite is exposed to a radiant heat source of about 100kW/m².
17. (original) The structural part of claim 16, wherein the phenolic resin system is acid-catalyzed.
18. (original) The structural part of claim 16, wherein the phenolic resin system is base-catalyzed.
19. (original) The structural part of claim 16, wherein the phenolic resin system comprises about 17% to about 21% by weight of the composite material, based on the total weight of the composite material.
20. (original) The structural part of claim 16, wherein the reinforcing fibers are selected from group consisting of glass fiber, carbon fibers, and mixtures and combinations thereof.
21. (original) The structural part of claim 16, whereby the composite material comprises about 63% to about 77% by weight reinforcing fibers, based on the total weight of the composite.

22. (original) The structural part of claim 16, whereby the composite material comprises about 7% to about 12% by weight alumina tri-hydrate, based on the total weight of the composite material.
23. (original) The structural part of claim 17, whereby the composite material comprises about 7% -9% by weight alumina tri-hydrate, based on the total weight of the composite material.
24. (original) The structural part of claim 18, whereby the composite material comprises about 12% by weight alumina tri-hydrate, based on the total weight of the composite material.
25. (original) The structural part of claim 16, wherein the phenolic resin system additionally comprises a siloxane modifier.
26. (original) The structural part of claim 16, whereby the composite material is formed by a method selected from the group consisting of: resin transfer molding resin infusion, filament winding, pultrusion and vacuum assisted resin transfer molding.
27. (original) The structural part of claim 16, wherein the composite material is suitable for forming into a structural part without requiring additional structural materials.
28. (original) The structural part of claim 27, wherein the composite material forms the entire load bearing path of the structural part.
29. (original) The structural part of claim 16, wherein the composite material has an ISO 9705 Average Heat Release Rate of less than about 100 kW, and an ISO 9705 Smoke Production Rate of less than about 1.4 m²/second.
30. (original) The structural part of claim 16, wherein the composite material has an ASTM E-1354 Ignitability of greater than about 90 seconds, an ASTM E-1354 300-Second Average Heat Release of less than about 100 kW/m², and an ASTM E-1354 Peak Heat Release of less than about 100 kW/m² when the composite is exposed to a radiant heat source of about 75 kW/m².

31. (original) The structural part of claim 16, wherein the composite material has an ASTM E-1354 Ignitability of greater than about 150 seconds, an ASTM E-1354 300-Second Average Heat Release of less than about 50 kW/m², and an ASTM E-1354 Peak Heat Release of less than about 65 kW/m² when the composite is exposed to a radiant heat source of about 50 kW/m².

32-42. (canceled)

43. (new) A structural part formed from a fire-resistant composite material comprising:

a phenolic resin system,
reinforcing fibers, and
alumina tri-hydrate;

wherein the composite material has an ASTM E-1354 Ignitability of greater than about 60 seconds, an ASTM E-1354 300-Second Average Heat Release of less than about 120 kW/m², and an ASTM E-1354 Peak Heat Release of less than about 150 kW/m² when the composite is exposed to a radiant heat source of about 100kW/m², and
wherein the composite material has a tensile strength greater than about 30 ksi and a compressive strength greater than about 20 ksi.

44. (new) The structural part of claim 43, wherein the composite material comprises about 17% to about 21% by weight phenolic resin system, based on the total weight of the composite material.

45. (new) The structural part of claim 43, wherein the composite material comprises about 63% to about 77% by weight reinforcing fibers, based on the total weight of the composite.

46. (new) The structural part of claim 43, wherein the composite material comprises about 7% to about 12% by weight alumina tri-hydrate, based on the total weight of the composite material.

47. (new) The structural part of claim 43, wherein the phenolic resin system additionally comprises a siloxane modifier.

48. (new) A structural part formed from a fire-resistant composite material, the structural part comprising:
- a fiber rich surface layer, and
- the fire-resistant composite material comprising:
- a phenolic resin system;
 - reinforcing fibers; and
 - alumina tri-hydrate.
49. (new) The structural part of claim 48, wherein the composite material has an ASTM E-1354 Ignitability of greater than about 60 seconds, an ASTM E-1354 300-Second Average Heat Release of less than about 120 kW/m^2 , and an ASTM E-1354 Peak Heat Release of less than about 150 kW/m^2 when the composite is exposed to a radiant heat source of about 100 kW/m^2 .
50. (new) The structural part of claim 49, wherein the composite material has a tensile strength greater than about 30 ksi and a compressive strength greater than about 20 ksi.
51. (new) The structural part of claim 48, wherein the phenolic resin system additionally comprises a siloxane modifier.
52. (new) The structural part of claim 48 forming a grating structure suitable for use as a floor panel or stair comprising at least three structural elements, including:
- a first I-beam support member;
 - a second I-beam support member parallel to the first I-beam support member; and
 - a transverse tie bar,
- wherein at least one of the structural elements comprises the fire-resistant composite material.
53. (new) The structural part of claim 48 forming a motor shaft comprising :
- a tubular body; and
 - a connector fitting,

wherein at least one of the tubular body and the connector fitting comprises the fire-resistant composite material.